



Title **Thiazide Diuretics as First-Line Treatment for Hypertension: Meta-Analysis and Economic Evaluation**

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Aim

To evaluate the evidence for the clinical effects and economic implications of thiazide diuretics (TZDs) when used as first-line treatment for hypertension.

Conclusions and results

This assessment is intended to inform those who must decide on an optimal choice of antihypertensive drug therapy in a patient diagnosed with hypertension for the first time.

TZD-based therapy is superior to placebo or no treatment in reducing the risks of all-cardiovascular (CV) and cerebrovascular (CRV) events in subjects with uncomplicated hypertension. No significant differences for all-CV- and CRV-related morbidity and mortality were found when comparing TZDs with other antihypertensive medications. TZDs, however, were better in reducing the risk of stroke than ACE inhibitors and in reducing the risk of heart failure than calcium channel blockers (CCB).

Economic analysis found little difference between therapies in terms of effectiveness, and found TZD to be the most cost-effective initial therapy for patients in all study populations, unless society is willing to pay more than 400 000 Canadian dollars per QALY gained from the use of CCB. Evidence from a limited number of trials, most of low quality, showed that the intensive lowering of blood pressure below the standard target of 140/190 mm Hg in patients with hypertension did not result in a difference in the risks of all-cause death, death related to cardiovascular events, and renal failure.

Recommendations

None.

Methods

For the clinical review, bibliographic databases and grey literature sources were searched until May 2007. Two reviewers, using defined criteria, selected studies systematically. We also conducted a review of economic

evaluations that compared the use of thiazide diuretics to other drug therapies, as a first-line therapy for the treatment of hypertension. No attempt was made to quantitatively synthesize the economic study results. Hence, the review of studies was presented in narrative form.

Further research/reviews required

Systematic reviews should be conducted to examine which agent is suitable as first-line therapy for hypertensive patients with specified comorbidities or diseases.